Diet, predisposition and reward.

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Ethische beoordeling	Niet van toepassing
Status	Werving nog niet gestart
Type aandoening	-
Onderzoekstype	Interventie onderzoek

Samenvatting

ID

NL-OMON25100

Bron
NTR

Verkorte titel
Diet, predisposition and reward

Aandoening

overweight
obesity
weight maintenance
polymorphisms
Brain plasticity of reward

overgewicht
obesitas
gewichtsbehoud
polymorfismen
hersenplasticiteit van beloning

Ondersteuning

Primaire sponsor: Maastricht university
Postbus 616
6200 MD Maastricht
Overige ondersteuning: Top institute of food and nutrition

Nieuwe Kanaal 9a
6709 PA Wageningen
The Netherlands

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

1. Differences in success between the diets (anthropometry measurements);
2. Differences in brain plasticity of reward;
3. Differences in the FTO and TaqIA genes.

Toelichting onderzoek

Achtergrond van het onderzoek

Overweight is a major health problem with serious co morbidities. Weight loss is usually achieved more readily than weight maintenance after body weight loss. Conditions for weight maintenance after weight loss are (a) sustained satiety despite negative energy balance, (b) sustained basal energy expenditure despite body weight loss, due to (c) sparing of fat-free mass, which is the main determinant of basal energy expenditure. Diets with a relatively high-protein content act on these metabolic targets (4). Increasing the relative protein content reduces food intake under ad libitum conditions, resulting in immediate body weight loss. In the long term, body weight reaches a new value at a significantly lower level. Thus, an increase in the relative protein content of the diet, irrespective of protein type, reduces the risk of a positive energy balance and the development of overweight. Increasing protein intake also increases the chance of maintenance of body weight after weight loss induced by an energy-restricted diet.
So the most successful diets are those with a relatively high-protein content. But compliance remains an issue with all diets. In the first place it will be assessed whether predisposition for overweight affects compliance and success; second, whether sensitivity for food-reward affects compliance and success.

Doel van het onderzoek

Overweight is a major health problem with serious co morbidities. Weight loss is usually achieved more readily than weight maintenance after body weight loss. Conditions for weight maintenance after weight loss are (a) sustained satiety despite negative energy balance, (b) sustained basal energy expenditure despite body weight loss, due to (c) sparing of fat-free mass, which is the main determinant of basal energy expenditure. Diets with a relatively high-protein content act on these metabolic targets (4). Increasing the relative protein

content reduces food intake under ad libitum conditions, resulting in immediate body weight loss. In the long term, body weight reaches a new value at a significantly lower level. Thus, an increase in the relative protein content of the diet, irrespective of protein type, reduces the risk of a positive energy balance and the development of overweight. Increasing protein intake also increases the chance of maintenance of body weight after weight loss induced by an energy-restricted diet.

So the most successful diets are those with a relatively high-protein content. But compliance remains an issue with all diets. In the first place it will be assessed whether predisposition for overweight affects compliance and success; second, whether sensitivity for food-reward affects compliance and success.

Onderzoeksopzet

1. Baseline (before weight loss);

2. After 6 months of weight loss;

3. After 3 months of weight maintenance.

Onderzoeksproduct en/of interventie

The study has a double blind parallel 2-arm design, with 2 conditions (diets). There are 2 different diets: one that is relatively high in protein and one with normal protein content. The subjects (n=300, BMI>25, age 18-55) first have a three-month period of weight loss during which they are on the same weight loss diet consisting of the commercially available meal substitute: modifast. This is followed by a six-month period of weight maintenance during which the subjects are randomized in 2 diet groups. Of the 300 subjects that complete the weight loss and weight maintenance, the polymorphisms of the TaqIA gene and the FTO gene are determined together with anthropometry measurements (body weight, body composition, waist-hip ratio and sagital diameter); of these 300, 88 will be assessed in the fMRI to investigate the brain areas involved in plasticity of reward with respect to food.
In total there are three measurement moments: before the weight loss, before the weight maintenance and after the weight maintenance at which anthropometry measurements are taken and the fMRI investigations are conducted. Compliance is determined by magnitude of weight loss.

Thus:

1. Weight loss using a commercial available meal substitute: modifast;

2. Weight maintenance during which the subjects are assigned to 1 of 2 diets: a relatively high protein diet and a diet with normal protein content.

Contactpersonen

Publiek

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Wetenschappelijk

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

Inclusion criteria for the whole study are being healthy (no medication use except contraception), both genders, age between 18-55 years, BMI over 25 kg/m2, non-smoker.

For the subjects that are included for the fMRI extra inclusion criteria are as follows: not having any metals in the body, being right-handed.

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

Exclusion criteria are: use of medication (except contraception), extensive alcohol consumption (more than 10 consumptions per week), instable weight (changed more than 5 kilo over the last year), pregnancy, depression, hypertension, kidney dysfunctions and other serious disorders (for example epilepsy, arrhythmia, parkinsonism, insomnia).

For the subjects that are included for the fMRI extra exclusion criteria are as follows: having metals in the body, being left-handed and claustrophobia.

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Parallel
Toewijzing:	Gerandomiseerd
Blindering:	Enkelblind
Controle:	Geneesmiddel

Deelname

Nederland

Status:	Werving nog niet gestart
(Verwachte) startdatum:	01-02-2010
Aantal proefpersonen:	300
Type:	Verwachte startdatum

Ethische beoordeling

Niet van toepassing

Soort:	Niet van toepassing

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

ID: 34707
Bron: ToetsingOnline
Titel:

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL2057
NTR-old	NTR2174
CCMO	NL30898.068.09
ISRCTN	ISRCTN wordt niet meer aangevraagd.
OMON	NL-OMON34707

Resultaten

Samenvatting resultaten
N/A